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13. ABSTRACT (Maximum 200 words) THIS IS A SUMMARY TABLE SHOWING ORGANOCHLORINE RESIDUES DETECTED IN THE BRAIN TISSUE OF 15 ANIMALS FOUND DEAD ON THE ARSENAL DURING 1982. SEVERAL OF THE SAMPLES HAD HIGH LEVELS OF DLDRN AND/OR ENDRN. OTHER CONTAMINANTS DETECTED WERE PPDE, PPDDD, PPDDT, HPCLE, TXPHEN, AND PCB. INCLUDED IS A MAP SHOWING THE LOCATION OF THE ANIMAL CARCASSES.					
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
PATUXENT WILDLIFE RESEARCH CENTER
220 West Prospect
Fort Collins, CO 80526

March 4, 1983

Dr. William McNeill
Director, Technical Operations
SARRM-TOE-C
Department of the Army
Rocky Mountain Arsenal
Commerce City, CO 80022

87091R05
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Dear Dr. McNeill:

Attached is a summary table showing organochlorine residues detected in brain tissues of some of the animals found dead at the RMA in 1982 in the course of our kestrel study. All of the specimens that were analyzed are included in the table. Several others were not analyzed because of carcass deterioration before they were found or because of limitations in the number of chemical analyses that can be done in support of our work.

As you will note, several of the brain samples had dieldrin concentrations exceeding 4 ppm and others were between 3 and 4 ppm. A few specimens had >0.8 ppm endrin and some had both dieldrin and endrin residues. Lethal organochlorine concentrations in brain tissue vary with chemical, species, and even individuals. However, there is considerable experimental and field evidence to associate dieldrin concentrations in the range of 4 to 8 ppm (or higher) and endrin concentrations of 0.6 to 0.8 ppm (or higher) generally with death of the animal. It also appears that individual animals may die from dieldrin poisoning in the range of 3 to 4 ppm in the brain.

The attached brain residue data are for your information and will not be released to the state agencies or EPA unless or until you agree that they should be. We do want to provide the brain residue data to USFWS Region 6 with the stipulation that the data are not for release to other agencies or the public. Is this agreeable with you?

Sincerely yours,

Lowell C. McEwen

Lowell C. McEwen, Leader
Rocky Mountain Field Station

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Rocky Mountain Arsenal
Information Center
Commerce City, Colorado

Organochlorine chemical residues in brains of birds and one mammal found dead on the Rocky Mountain Arsenal, 1982

Species	Chemical ^{1/} residue concentrations ≤ 0.1 ppm, wet basis									
	DIELD	ENDR	DDE	P,p' DDT	P,p' DDT	HE	OXY-CHLO	Cis-CHLOR	Trans-NONA	Cis-NONA
1. Eared grebe	0.18		18.0				0.36			0.19
Podiceps nigricollis										
2. Gadwall										
Anas strepera ^{3/}										
Mallard										
Anas platyrhynchos ^{3/}										
Red-tailed hawk										
Buteo jamaicensis	3.7									
Red-tailed hawk	4.2									
Ring-necked pheasant										
Phasianus colchicus ^{3/}										
Great blue heron										
Ardea herodias										
Black-billed magpie	11.0	0.22	15.0	0.42			0.66	0.57	0.48	0.37
Pica pica	5.3		5.5		0.28					0.55
European starling										
Sturnus vulgaris	7.9	0.18	6.1							
European starling	3.3									
European starling	5.7		0.51							
Brewer's blackbird										
Euphagus cyanocephalus	7.9		4.1	0.20	0.10		0.28		0.18	
Brewer's blackbird	12.0		2.5			0.18	0.27		0.40	
Northern oriole										
Icterus galbula	3.4									
Muskrat										
Ondatra zibethica										

1 DIELD=Dieldrin, ENDR=Endrin, HE=Heptachlor epoxide, OXYCHLOR=Oxychlorane, Cis-CHLOR=Cis-Chlordane, Trans-NONA=trans-Nonachlor, Cis-NONA=Cis-Nonachlor, TOX=Toxaphene, and PCB=Polychlorinated biphenyl identified as Aroclor 1260.

2 No toxaphene was detected (sensitivity > 0.1 ppm)

3 These specimens were still alive when found but soon died showing toxic signs. The mallard was collected in December, 1981.

